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ABSTRACT

Fort Worth Independent School District (FWISD) students scoring at the 77%ile and above were exposed to three different treatments: (1) a Magnet Plan involving the reassignment of students and teachers to special schools; (2) a Vanguard Plan for students and teachers within a school; and (3) unspecified instructional enrichment provided in neighborhood schools. After two years, a comparison of standardized test scores revealed no significant differences in achievement of fifth grade students in the Magnet Plan and students in the Vanguard Plan or in neighborhood schools. However, fourth grade students in the Magnet Plan for one year did achieve significantly more than their counterparts in the other two treatments in vocabulary, language, and mathematics. It was found that students in all three treatments tended to maintain their high achievement, while fourth grade minority students improved their overall performance relative to the national norm group. FWISD students involved in these programs maintained their achievement better than comparable students in these grades just prior to the implementation of the Magnet/Vanguard Plan. (Author/CTM)

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DEPARTMENT OF RESEARCH AND EVALUATION

ELEMENTARY MAGNET/VANGUARD

PLAN EVALUATION

1976-77

YEAR II

Session 17.21

Prepared for

Dr. Gerald Ward
Superintendent
Fort Worth Independent School District

by

Dr. Charles L. Evans
Director
Research and Evaluation Department

October 1977

MANAGEMENT SUMMARY

Elementary Magnet/Vanguard Evaluation, Year II
FWISD Department of Research and Evaluation
Charles L. Evans, Investigator

FWISD students scoring at the 77%ile and above have been exposed to three different treatments: a) a Magnet Plan involving the reassignment of students and teachers to special schools; 2) a Vanguard Plan for students and teachers within a school; and 3) unspecified instructional enrichment provided in neighborhood schools (Alternates).

After two years, a comparison of standardized test scores revealed no significant differences in achievement of fifth grade students in the Magnet Plan and students in the Vanguard Plan or in neighborhood schools (Table 1, p. 3). However, fourth grade students in the Magnet Plan for one year did significantly achieve more than their counterparts in the other two treatments in vocabulary, language, and mathematics (Table 2, p. 11).

Other findings were....

1) Students in all three treatments tended to maintain their high achievement (Table 3, p. 12);

2) Fourth grade minority students improved their overall performance relative to the national norm group (Tables 4 and 5, p. 20); and

3) FWISD students involved in these programs maintained their achievement better than comparable students in these grades just prior to the implementation of the Magnet/Vanguard Plan (Tables 6 and 7, pp. 22 and 24).

TABLE OF CONTENTS

	Page
SECTION I Background	1
SECTION II Comparison of Achievement by Program	2
Two-Year Comparison	2
One-Year Comparison	10
Ability Level Trends	10
Minority Achievement	19
Ex-Post Facto Comparison	21

LIST OF TABLES

Page

1. Comparison of Two-Year Achievement on the ITBS by High Ability Anglo Students in Three Programs, Grades 4-5 3

2. Comparison of One-Year Achievement on the ITBS by High Ability Anglo Students in Three Programs, Grade 4 11

3. Changes in ITBS Composite Percentile Rank of Students in Three Programs by Ability Levels . . . 12

4. Achievement of High Ability Black Students in Magnet/Vanguard Plans on the ITBS Composite . . 20

5. Achievement of High Ability Mexican American Students in Magnet/Vanguard Plans on the ITBS Composite 20

6. Percent of Fifth Grade Students in Stanines 7-9 by Program 22

7. ITBS Composite of High Ability Students, Grades 3-6 (All ethnicities) 24

LIST OF EXHIBITS

		Page
A.	A Comparison of Two-Year Growth in Three Programs, Vocabulary Subtest of the ITBS	4
B.	A Comparison of Two-Year Growth in Three Programs, Reading Subtest of the ITBS	5
C.	A Comparison of Two-Year Growth in Three Programs, Language Subtest of the ITBS	6
D.	A Comparison of Two-Year Growth in Three Programs, Study Skills Subtest of the ITBS	7
E.	A Comparison of Two-Year Growth in Three Programs, Mathematics Subtest of the ITBS	8
F.	A Comparison of Two-Year Growth in Three Programs, Composite of the ITBS	9
G.	A Comparison of One-Year Growth in Three Programs, Vocabulary Subtest of the ITBS	13
H.	A Comparison of One-Year Growth in Three Programs, Reading Subtest of the ITBS	14
I.	A Comparison of One-Year Growth in Three Programs, Language Subtest of the ITBS	15
J.	A Comparison of One-Year Growth in Three Programs, Study Skills Subtest of the ITBS	16
K.	A Comparison of One-Year Growth in Three Programs, Mathematics Subtest of the ITBS	17
L.	A Comparison of One-Year Growth in Three Programs, Composite of the ITBS	18
M.	Percent of Students Scoring in Stanines 7-9, Three Programs and Ex-Post Facto	23
N.	Percentile Ranks of High Ability Students, Three Programs and Ex-Post Facto	25

SECTION I

BACKGROUND

Organization

In the fall of 1975 fourth and fifth grade students scoring at or above the 77%ile (Stanines 7-9) on the ITBS were assigned and transported to the Magnet schools. Due to a lack of space, all minority students who qualified and applied were admitted, but Anglo students were selected randomly. Anglo students who were not selected (alternates) continued to attend neighborhood schools and were utilized as a 'control group' for evaluation purpose. The third group utilized for comparison was composed of students (Vanguard) in four schools where an in-home Magnet plan was implemented for students already assigned to the school.

1975-76 Test Results (Year I)

The ITBS math and reading subtests were administered in the fall and spring of 1975-76 to these three groups: Magnet, Vanguard and Alternates. Test results presented in the first year evaluation were mixed (Tables 1 and 2). No significant differences in achievement were noted for fifth graders in either math or reading; however, fourth grade Magnet students' achieved significantly greater growth in reading skills than Vanguard or Alternate students. Generally, the trend was for the achievement of Magnet students in that first year to equal or slightly exceed the achievement of other groups.

SECTION II

COMPARISON OF ACHIEVEMENT BY PROGRAM

The ITBS battery was readministered in the fall and spring of 1976-77 allowing a comparison of achievement of Magnet, Vanguard and Alternates over a two-year period. The data presented reflects achievement of fifth grade students who were in one of these three programs for two years and that of fourth grade students who were in one of the three programs for one year. Comparisons were made of achievement on 1) vocabulary, 2) reading comprehension, 3) language skills, 4) study skills, 5) math skills, and 6) the overall performance (composite) on the ITBS test battery.

Two-Year Comparison (Grade 5)

Data in Table 1 compares the achievement of students who have been in the Magnet Plan for two years--Grades 4 and 5--with that of similar students in Vanguard schools and in neighborhood schools (Alternates). No significant differences in two-year achievement were noted for students in the three groups in the areas of vocabulary, reading comprehension, language, math, and on the overall measure of achievement, the composite score on the ITBS. A significant difference was found favoring the Magnet students over the Vanguard students (but not over the Alternates) in the area of study skills.

One-year gains on the ITBS subtests by these fifth graders during 1976-77 were not significantly different from Vanguard students or Alternates. These data were tabulated and available but are not presented as part of this report.

These two-year comparisons are depicted in Exhibits A through F.

Table 1. Comparison of Two-Year Achievement on the ITBS by High Ability Anglo Students in Three Programs, Grades 4-5

Program	N	ITBS Averages* Spring 1977, Grade 5					
		Vocabulary GE	Reading GE	Language GE	Study Skills GE	Math GE	Composite GE
Alternates	82	7.26	7.35	7.47	7.39	7.22	7.33
Vanguard	186	7.17	7.22	7.50	7.27	7.13	7.27
Magnet	94	7.17	7.45	7.49	7.48	7.10	7.32
F Test of Significance (Need F = 3.02)		.63	2.97	.11	4.13**	.79	.69

*Adjusted statistically to allow for initial differences in group achievement.
**Averages differ significantly (P = .05).

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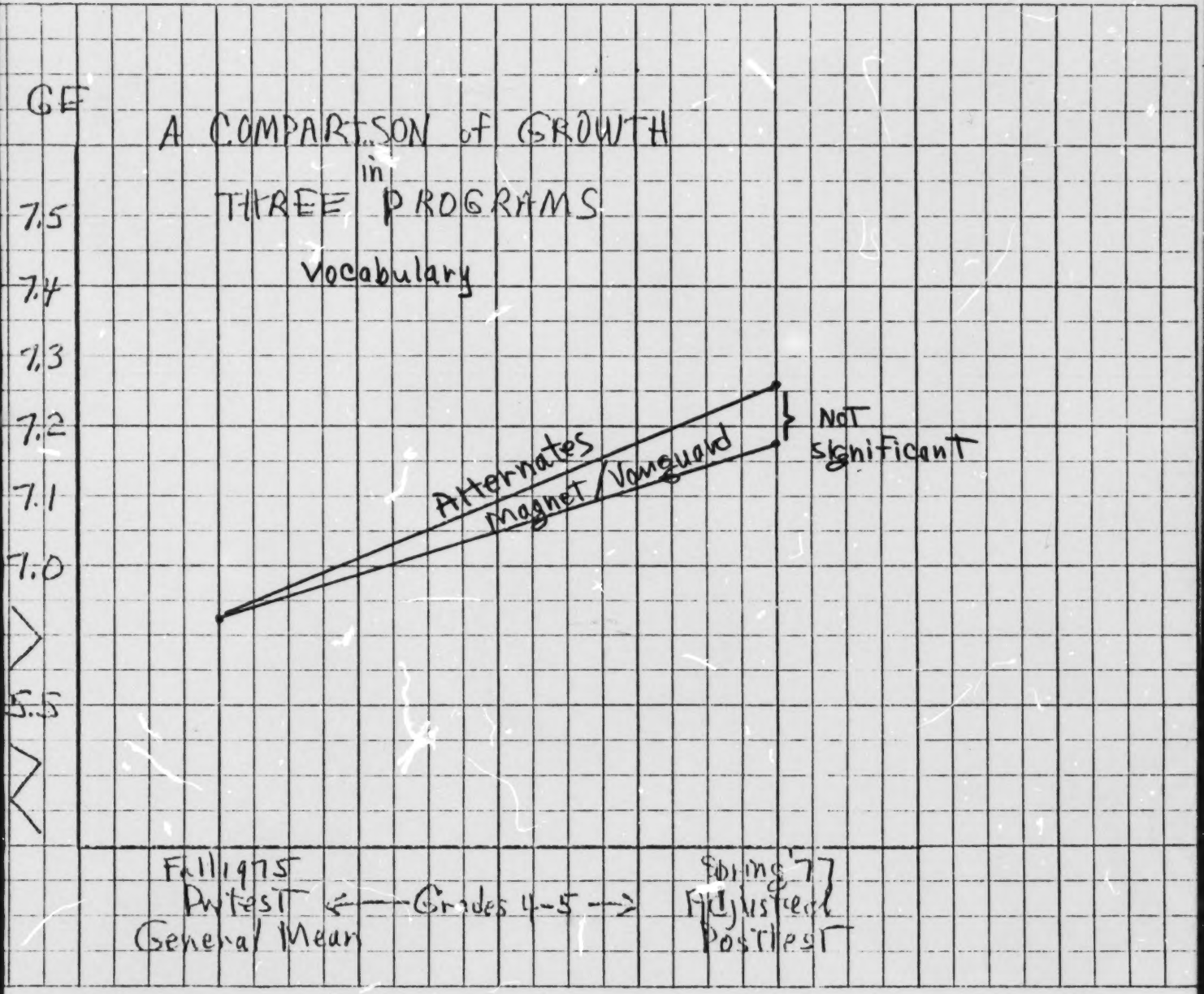

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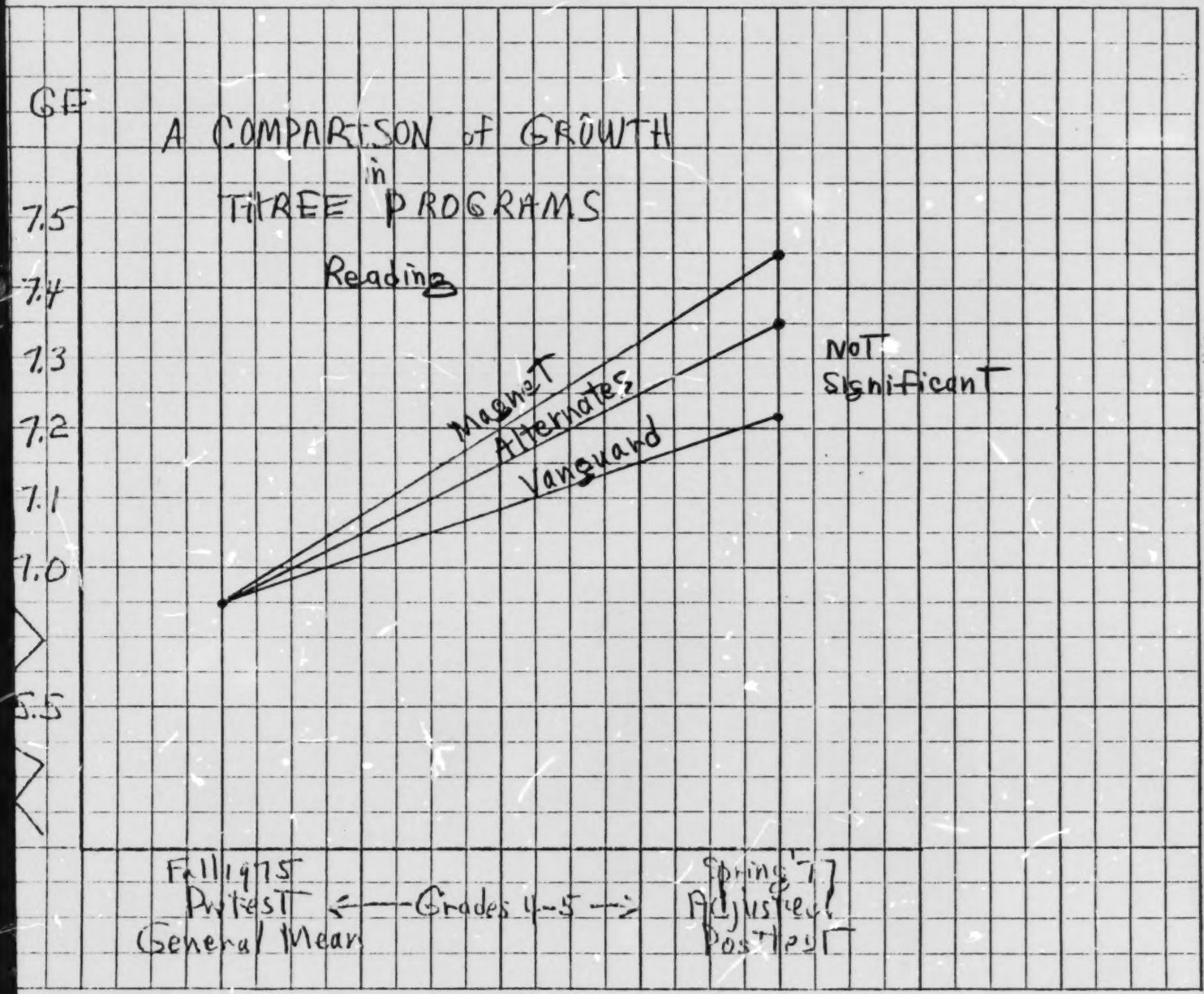

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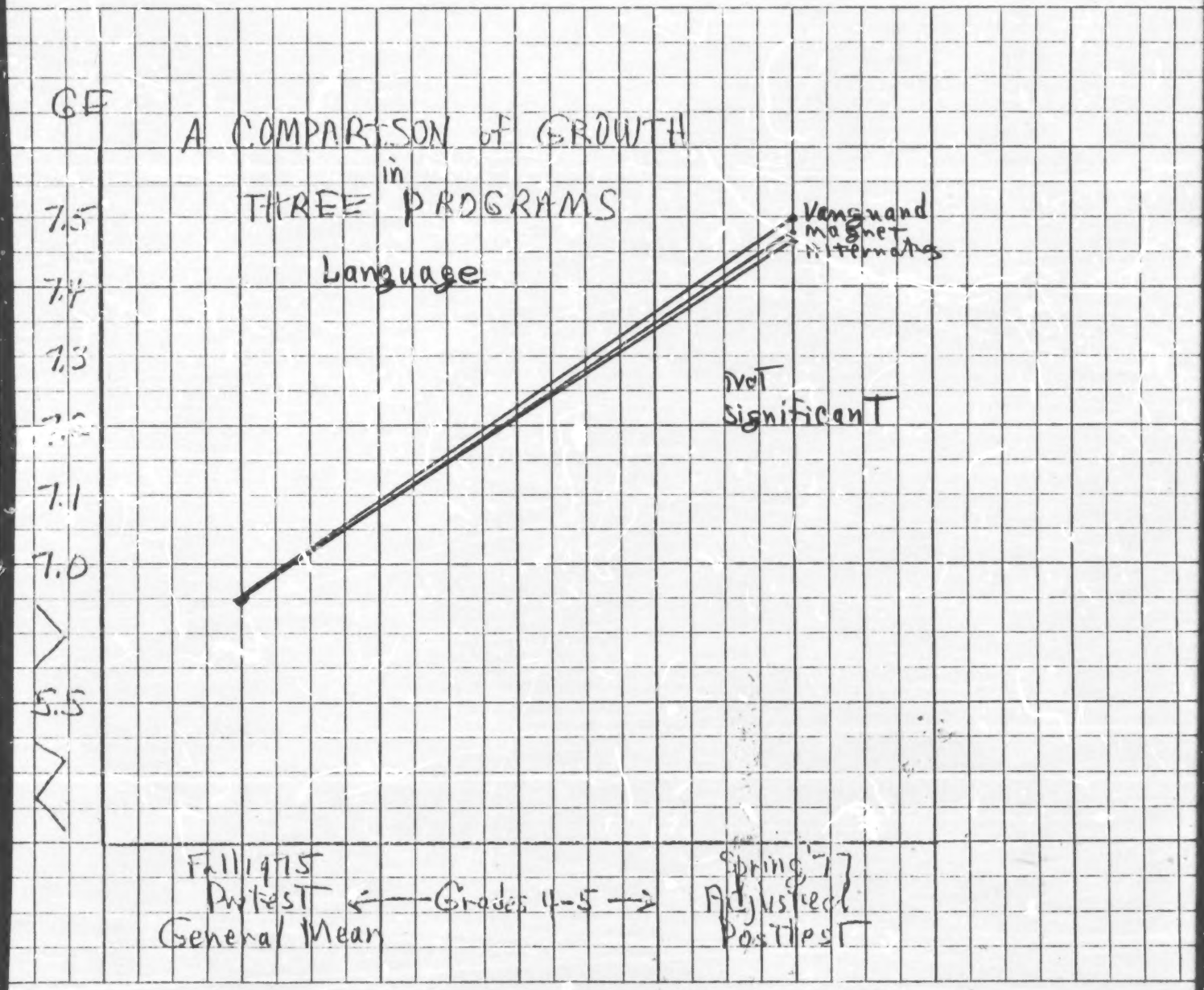

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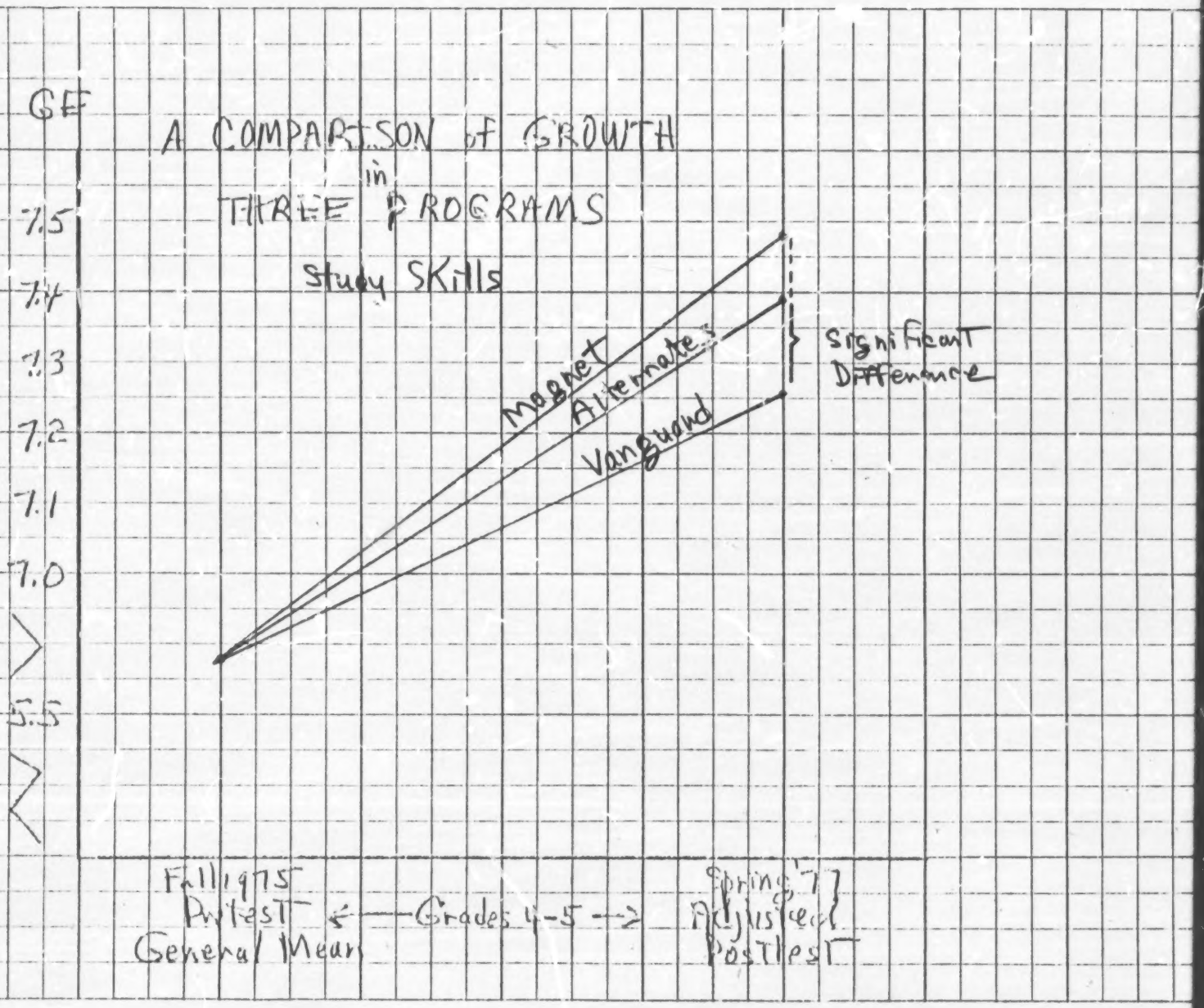

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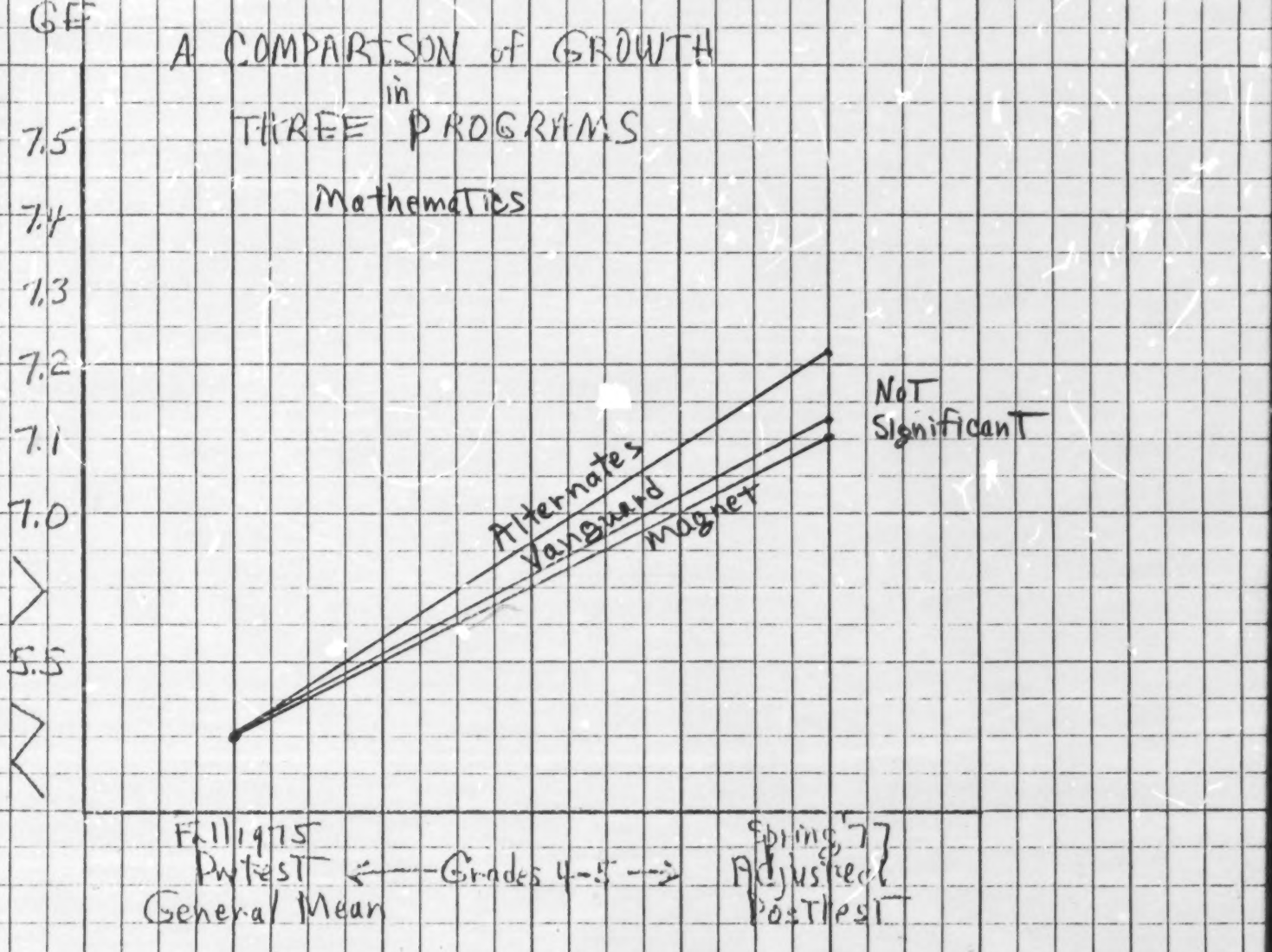
A COMPARISON of GROWTH in THREE PROGRAMS

Mathematics



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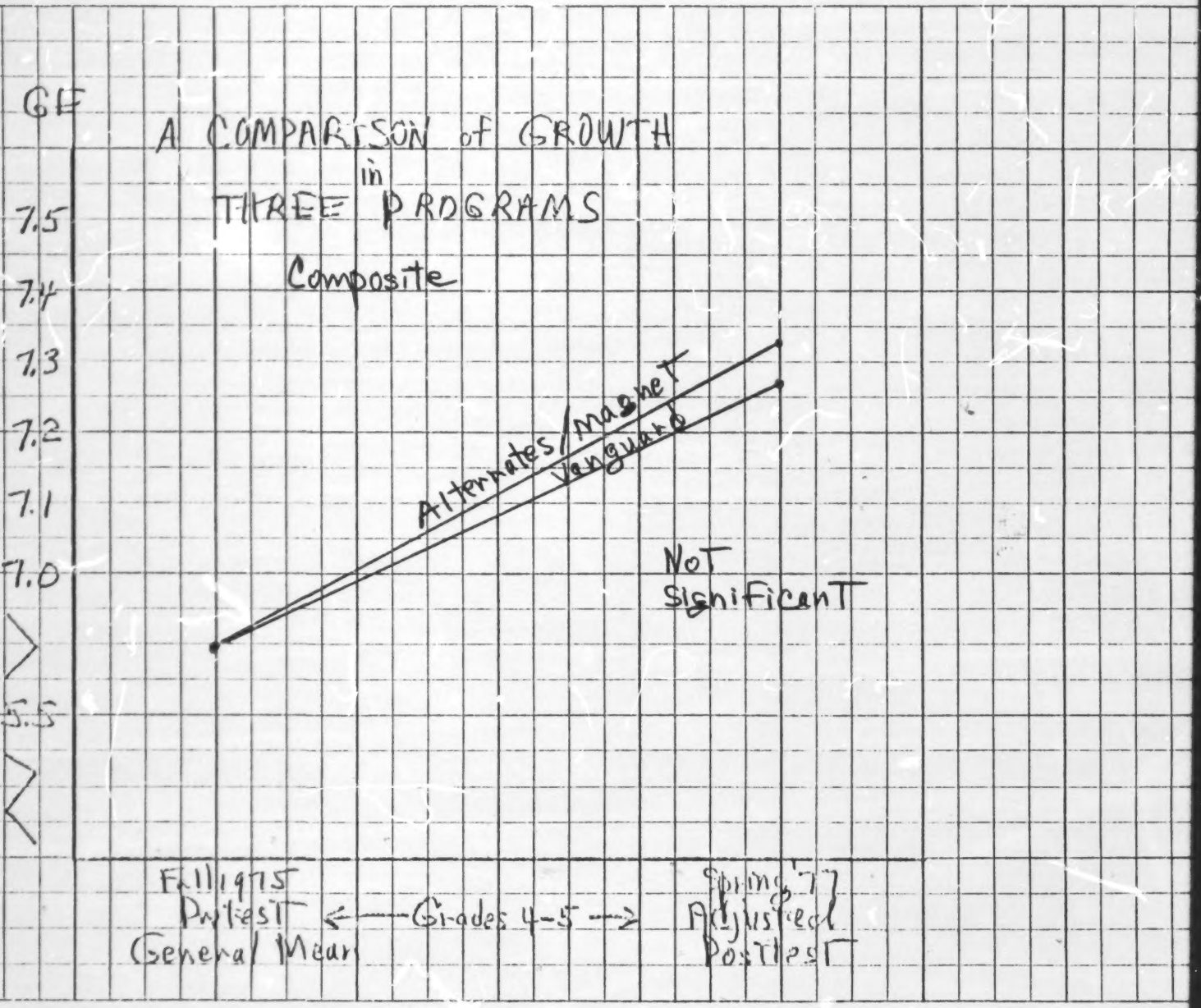

One-Year Comparison (Grade 4)

Data in Table 2 compares the achievement during 1976-77 of fourth graders in the three programs. Magnet students achieved significantly more than Alternates and, in most cases, than Vanguard students in the areas of 1) vocabulary, 2) language, 3) mathematics, and 4) on the composite. Achievement of students in the three programs was similar in the areas of reading and study skills. Vanguard students achieved significantly more than Alternates in the areas of 1) language, 2) mathematics, and 3) the test battery composite. The Magnet Plan appeared to have the strongest effect on mathematics: Magnet students gained three months more than Vanguard students and four months more than Alternates in 1976-77. These comparisons are depicted in Exhibits G through L.

Ability Level Trends

Data in Table 3 shows percentile ranks earned by Anglo students in the three programs on the pretest and on the posttest. The data indicate that, on the average, students in all programs tended to maintain their ranks on the total ITBS battery. The strong product moment correlations between pretest and posttest, ranging from .75 to .85, also verified this maintenance of rank. These correlations are unusually high for such a homogeneous population.

Ranks were maintained best by fourth grade Magnet students. Ranks of fourth graders in all programs were maintained quite well; ranks of fifth graders tended to decline slightly in all programs, at the upper range.

Table 2. Comparison of One-Year Achievement on the ITBS of High Ability Anglo Students in Three Programs, Grade 4

Program	N	ITBS Average*, Spring 1977					
		Vocabulary GE	Reading GE	Language GE	Study Skills GE	Math GE	Composite GE
Alternates	146	6.08	6.22	6.41	6.15	5.82	6.15
Vanguard	207	6.15	6.36	6.51	6.22	5.91	6.22
Magnet	120	6.29	6.28	6.64	6.22	6.20**	6.33
*F Test of Significance (Need F = 3.02)		5.40**	1.87	8.10**	.64	18.1**	9.47**

*Averages adjusted statistically to allow for initial group differences.
**Averages differ significantly (P =<.05 level of confidence).

Table 3. Changes in ITBS Composite Percentile Rank of Students in Three Programs by Ability Levels

Program And Students	Posttest PR for Each Pretest PR			
	78%ile	88%ile	95%ile	99%ile
Grade 4*				
Alternates	78	87	92	96
Vanguard	78	87	94	97
Magnet	81	89	95	98
Grade 5**				
Alternates	78	86	92	96
Vanguard	76	84	92	96
Magnet	78	86	92	96

*Grade 4, Fall-to-Spring
**Fall Grade 4 to Spring Grade 5

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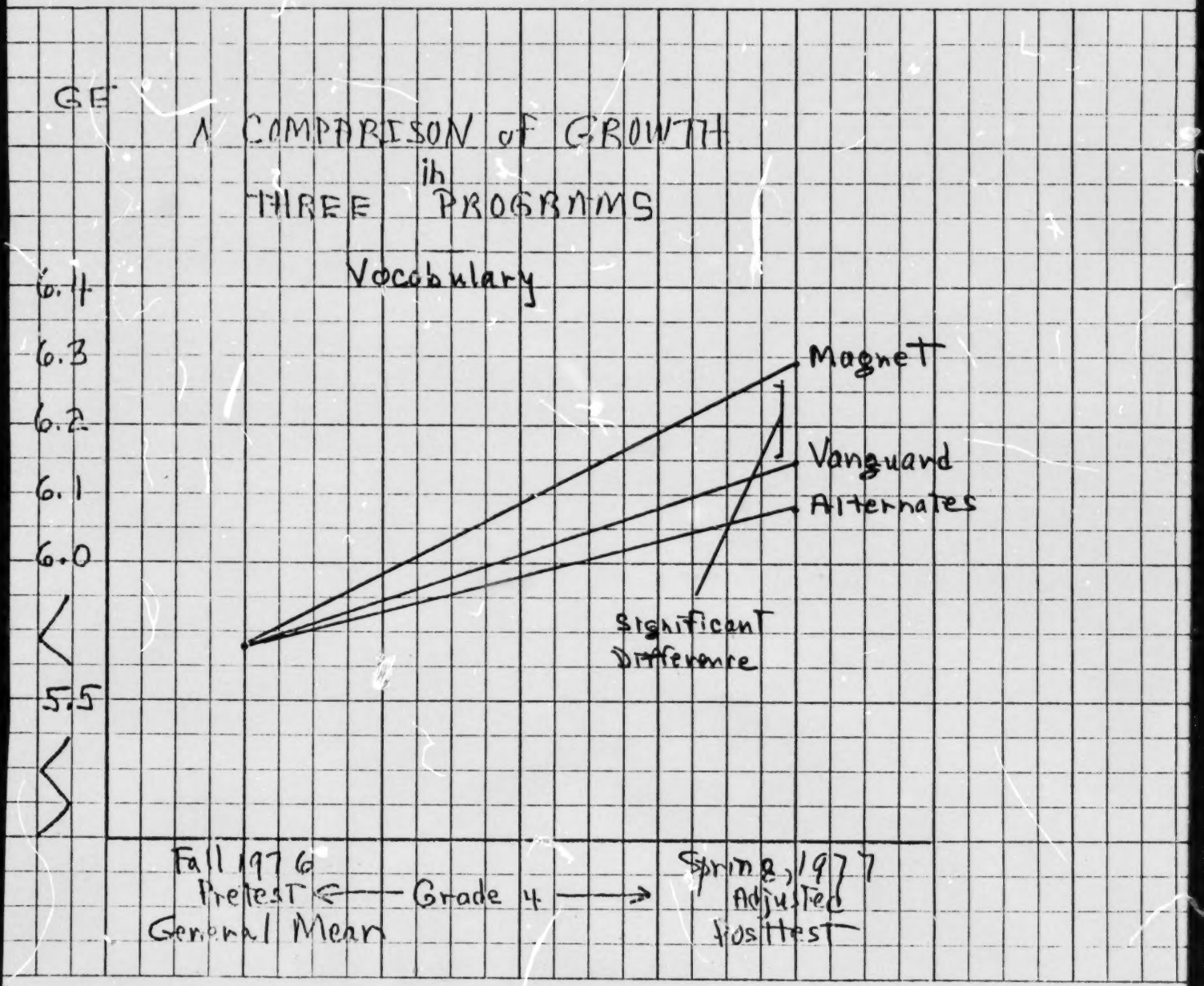

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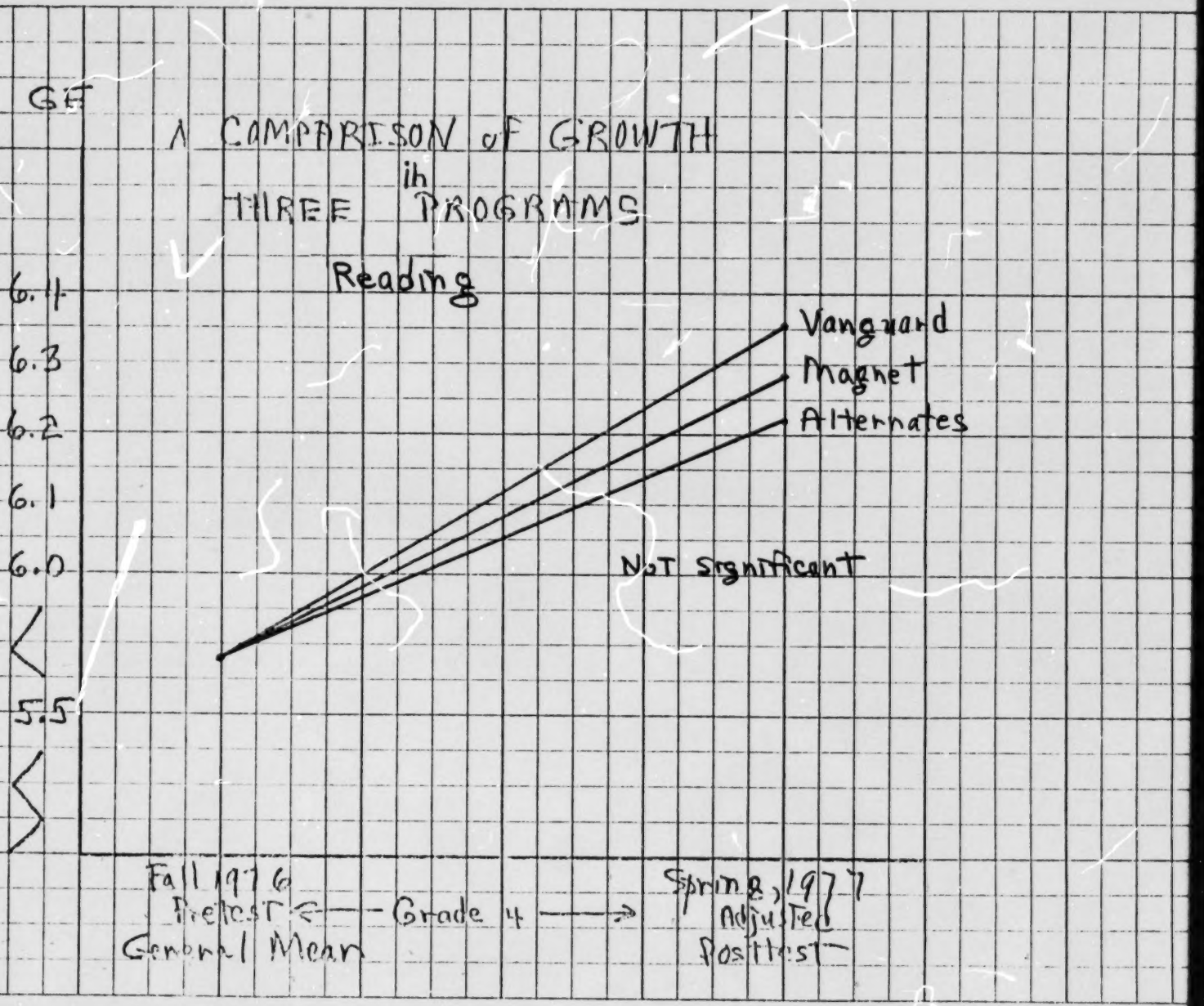

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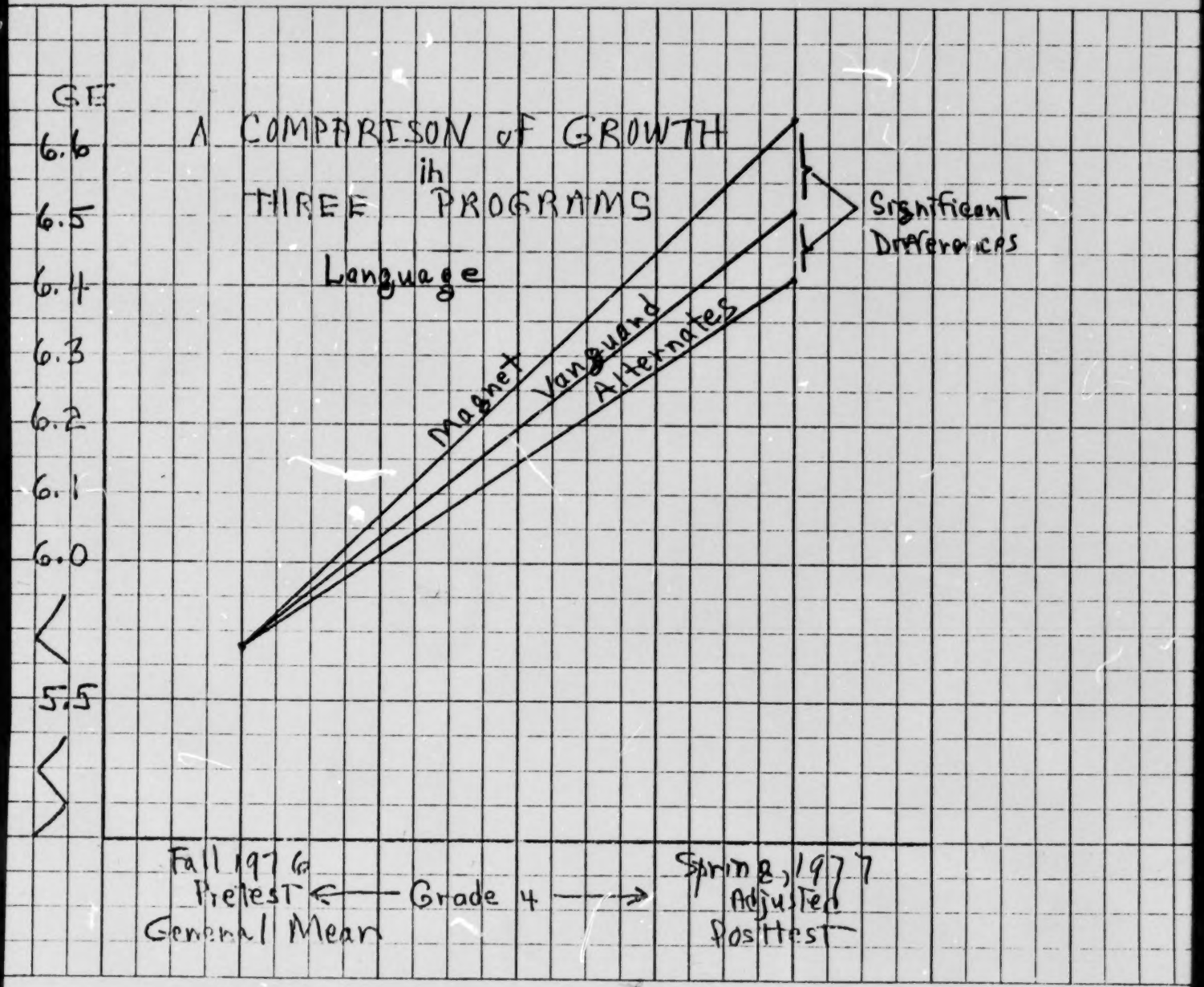

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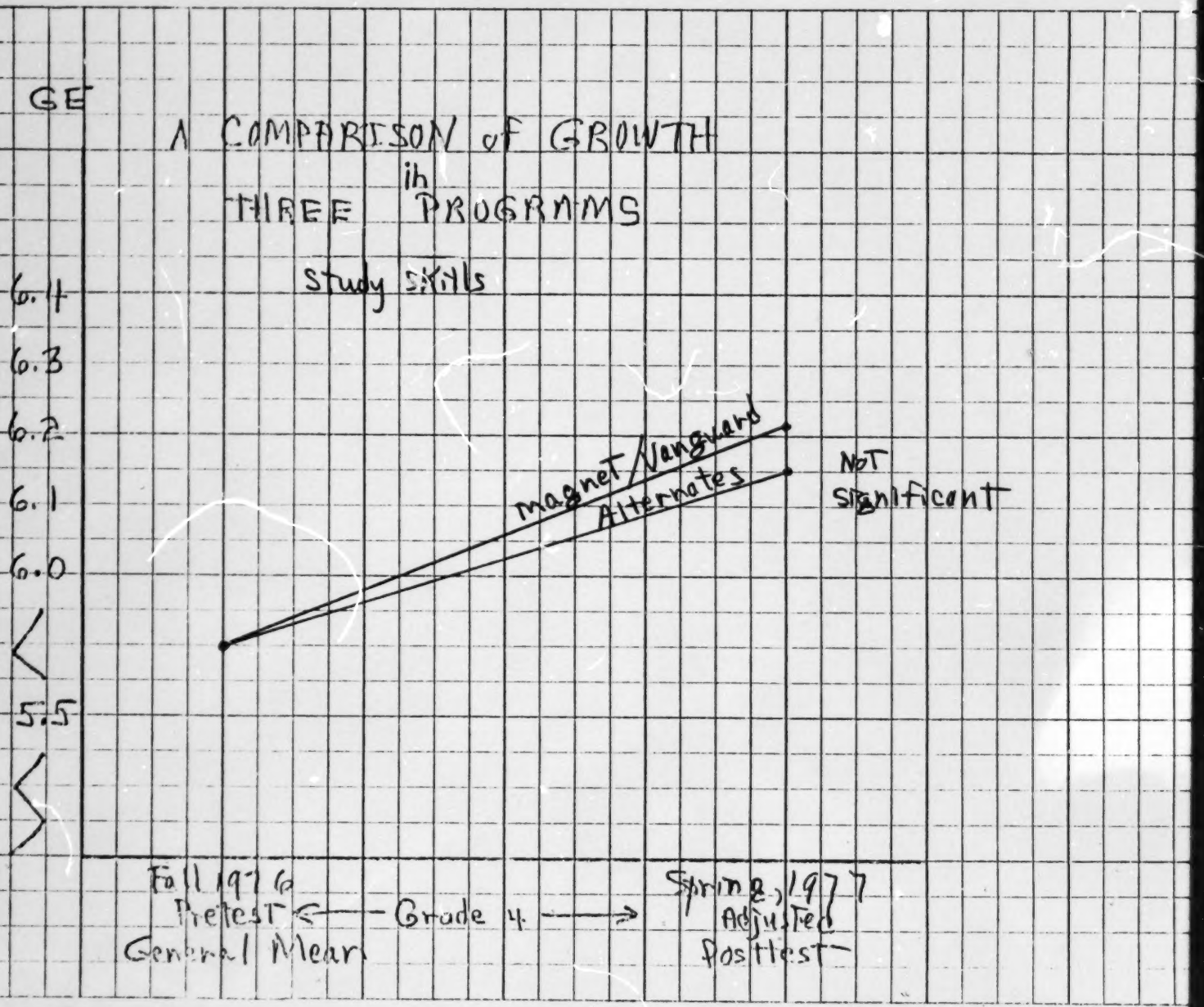

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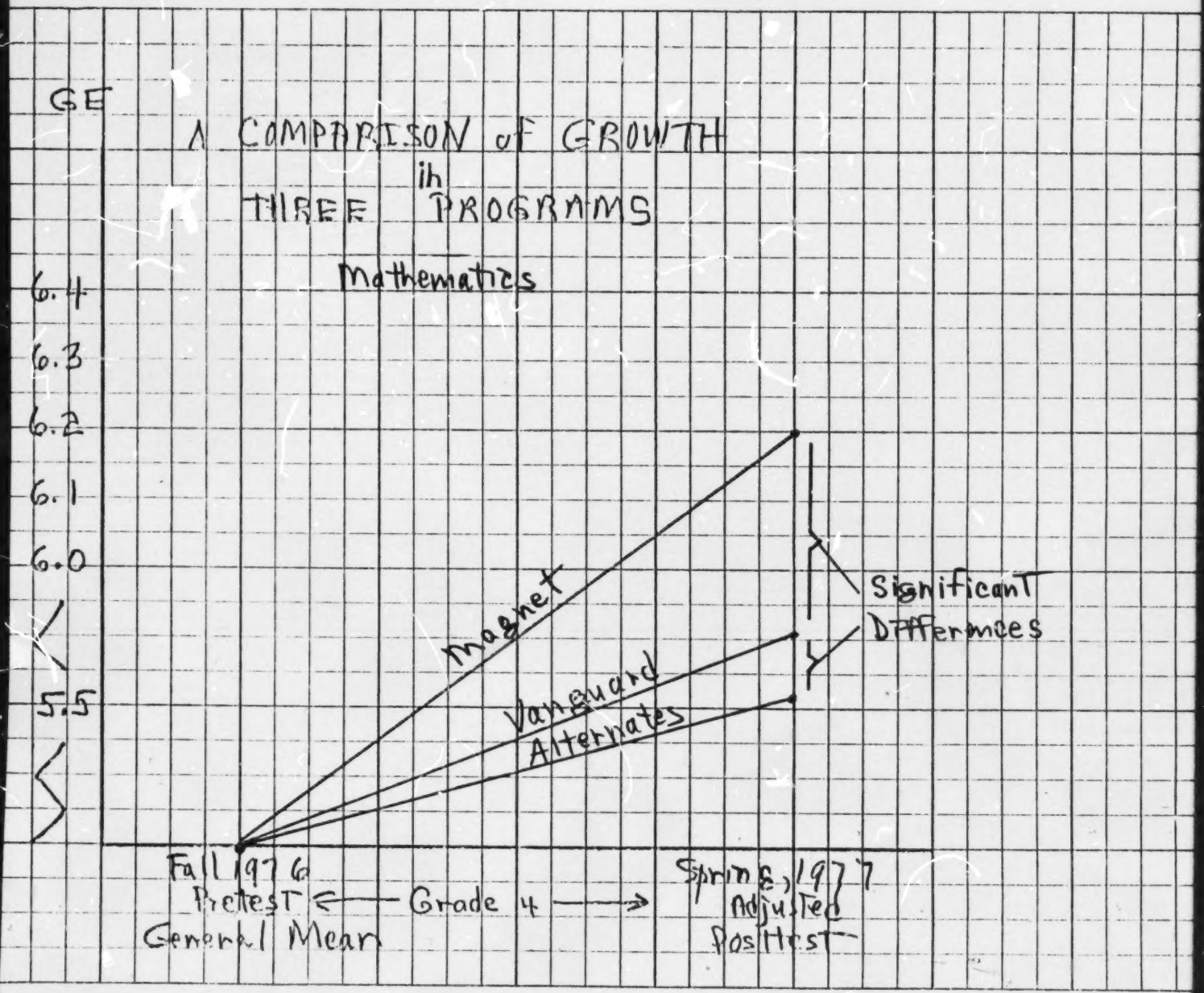

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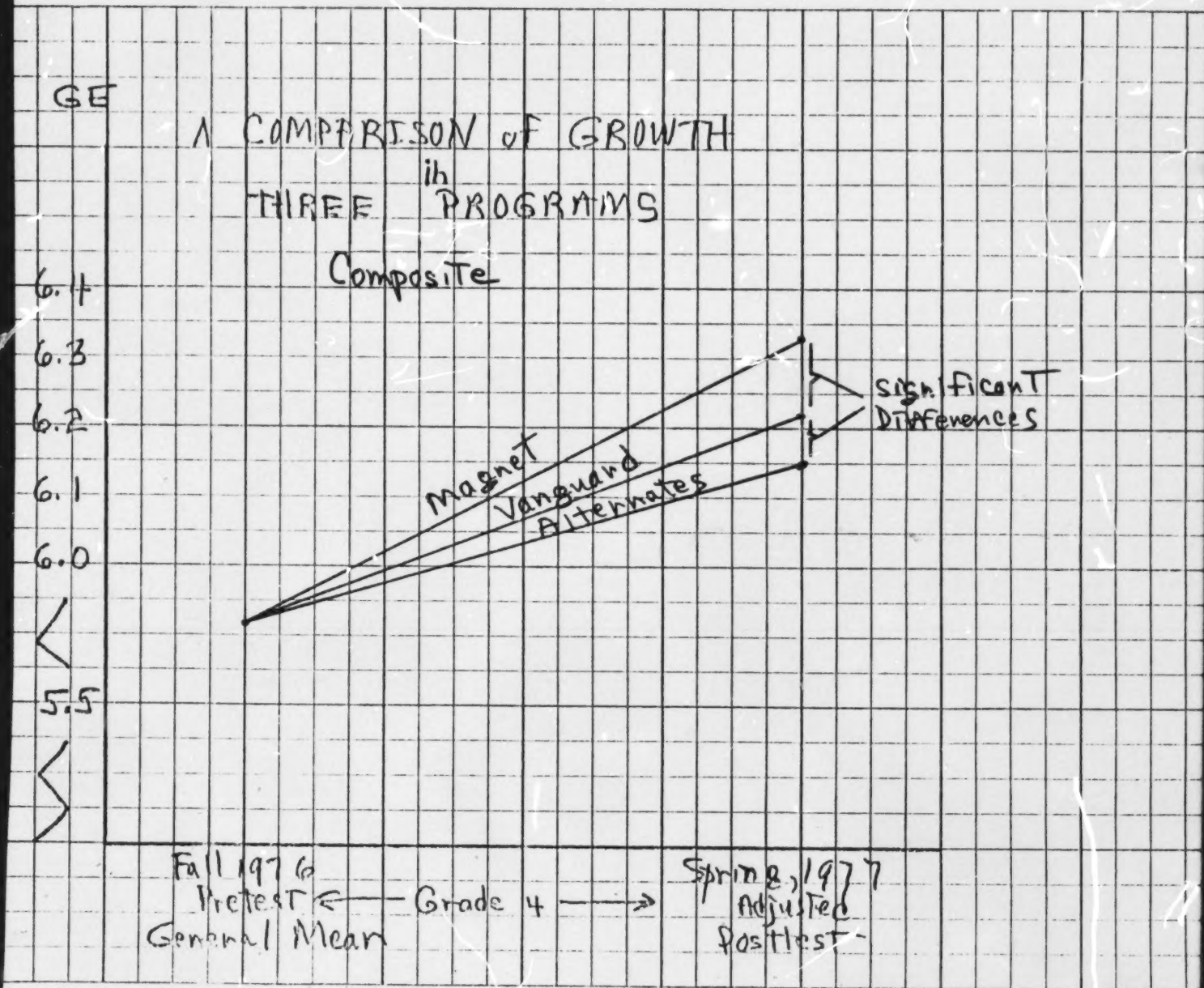

Minority Achievement

As all minority students who qualified were invited to participate in the Magnet Plan, no comparable group was omitted, as in the case of Anglo students, that would serve as an adequate comparison group. However, an assessment of the academic progress of minority students in the Magnet and/or Vanguard prorgrams was possible. The numbers of these students were small, and the assessment was arbitrarily made where at least ten (10) students' scores were available.

Data in Tables 4 and 5 indicate that high ability, fourth grade minority students in the program during 1976-77 improved their performance relative to comparable students (of all ethnicities) in the national norm group.

The twenty-one fourth grade Black students in the Magnet Plan in 1976-77 averaged the 76%ile in the fall and the 83%ile in the spring. The fourteen Mexican American fourth graders in the Magnet Plan in 1976-77 averaged the 88%ile in the fall and the 92%ile in the spring.

In grade five, after two years of Magnet or Vanguard programs, Black students' scores declined. Insufficient numbers of Mexican American students were available for assessment at grade five.

Table 4. Achievement of High Ability Black Students in Magnet/Vanguard Plans on the ITBS Composite

Program	Grade 4 Averages				Grade 5 Averages			
	N	Fall '76 GE/PR	Spr.'77 GE/PR	Gain	N	Fall '75 GE/PR	Spr.'77 GE/PR	Gain
Magnet	21	4.9/76	5.9/83	1.0 yr.	11	5.2/83	6.8/78	1.6 yrs.
Vanguard	5	(Not assessed)		-o-	12	5.1/81	6.6/74	1.5 yrs.

Table 5. Achievement of High Ability Mexican American Students in Magnet/Vanguard Plans on the ITBS Composite

Program	Grade 4 Averages				Grade 5 Averages			
	N	Fall 76 GE/PR	Spr.'77 GE/PR	Gain	N	Fall 76 GE/PR	Spr.'77 GE/PR	Gain
Magnet	14	5.5/88	6.4/92	.9 yr.	4	(Not assessed)		-o-
Vanguard	2	(Not assessed)		-o-	3	(Not assessed)		-o-

Comparison with Ex-Post Facto Group

In order to compare the achievement of high ability students in the Magnet/Vanguard Plan with that of comparable students who preceded them, ITBS composites earned by high ability students who entered grade three in 1972-73 and grade six in 1975-76 were obtained. These scores were analyzed in a memo (March 10, 1977) to the Director of Elementary Instruction to aid in setting objectives for the Magnet/Vanguard Plan. These students are also useful as another comparison group: the 'Ex-Post Facto' group. Although the Alternate group contained only Anglo students, minority students were included in the Ex-Post Facto group and were thus included in the Magnet/Vanguard group.

Data in Table 6 compare the percent of students scoring in each stanine at the conclusion of grade five on the ITBS composite. All students (100 percent) scored in stanines 7-9 in grade three. At the conclusion of grade five, only 70 percent of the Ex-Post Facto students remained in stanines 7-9 in comparison with 74 percent of the Vanguard students, 78 percent of the Magnet students, and 82 percent of the Alternates. These data suggest that high ability students in each of the three treatments since the implementation of the Magnet/Vanguard Plan exceeded the growth of high ability students in prior years. Data in Table 6 are depicted in Exhibit M.

Average grade equivalents (GE) and percentile ranks (PR) of the four groups of students are also compared in Table 7 and Exhibit N. A sharp decline in average PR for the Ex-Post Facto group is noted, declining from a PR of 91 to 83 in the fall of grade six. In contrast, the high ability students in the Magnet/Vanguard program and in the neighborhood schools generally improved or maintained their percentile ranks from grade three through the spring of grade five. Scores earned by these students as sixth graders in the fall of 1977 will be needed for a final comparison with the Ex-Post Facto group.

Table 6. Percent of Fifth Grade Students in Stanines 7-9 by Program

Group	Stanine Distribution (Spring, Gr. 5)									Total Stanines 7-9	
	1	2	3	4	5	6	7	8	9		
Magnet Plan	-o-	-o-	-o-	1%	3%	17%	35%	32%	11%	78%	85/109
Vanguard Plan	-o-	-o-	-o-	1%	3%	22%	36%	29%	8%	74%	148/201
Alternates (Anglos only)	-o-	-o-	-o-	2%	2%	13%	41%	27%	14%	82%	75/91
Ex-Post Facto*	-o-	-o-	-o-	3%	9%	19%	33%	24%	12%	69%	177/254

*Fall Grade Six.

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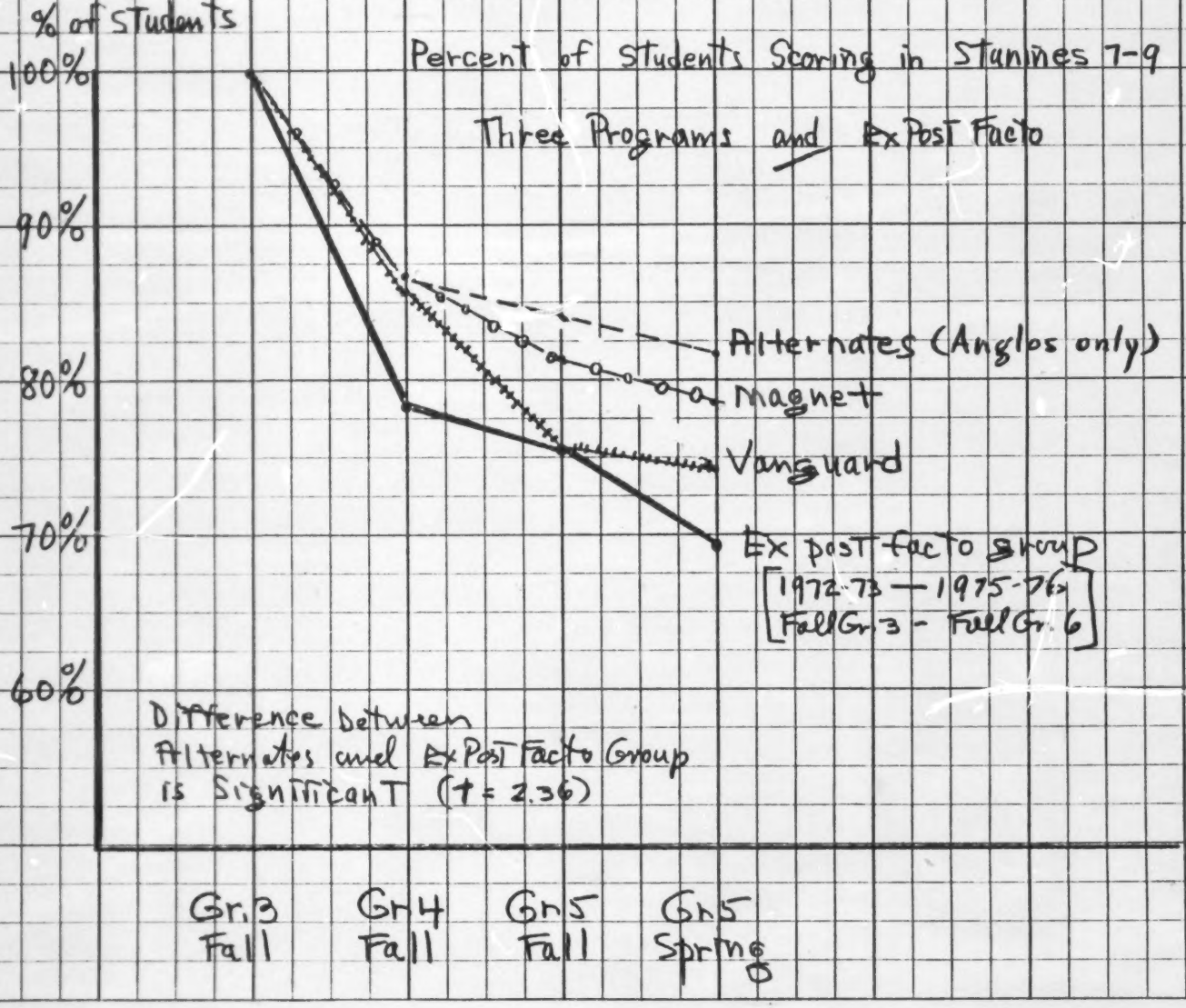

Table 7. ITBS Composite by High Ability Students, Grades 3-6 (All Ethnicities)

Group	N	ITBS Grade Equivalent and Percentile Rank									
		Grade 3 Fall		Grade 4 Fall		Grade 5 Fall		Grade 5 Spring		Grade 6 Fall	
		GE	PR	GE	PR	GE	PR	GE	PR	GE	PR
Ex-Post Facto (1972-73 - 1975-76)	254	4.54	91	5.42	87	6.58	88	(Not tested)		7.53	83
Magnet Plan	109	4.16	85	5.61	90	6.66	90	7.28	88	(Not yet available)	
Vanguard Plan	201	4.00	80	5.58	90	6.56	88	7.21	86	(Not yet available)	
Alternates (Anglos only)	82	4.42	90	5.65	92	6.64	88	7.33	88	(Not yet available)	

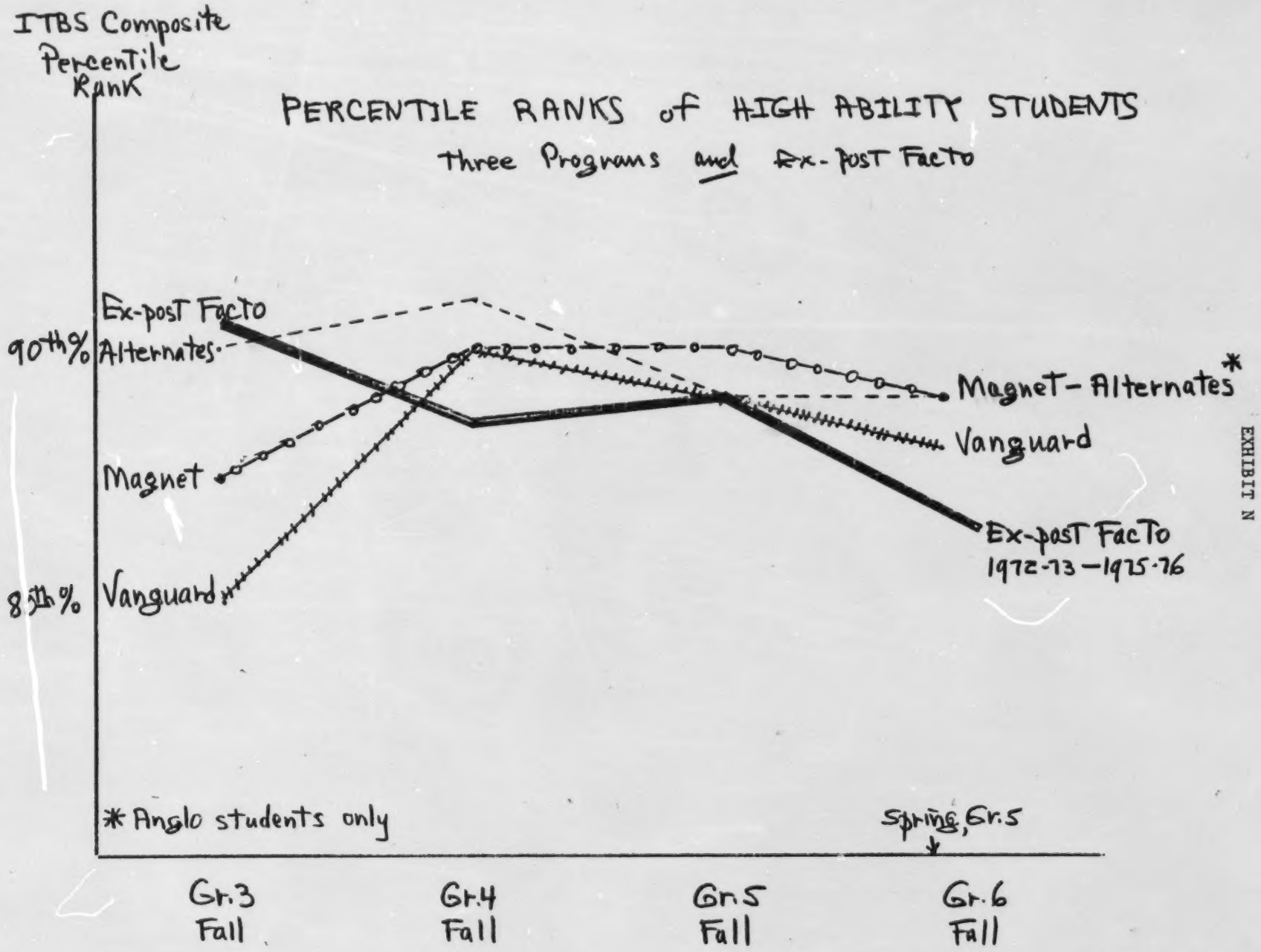
ITBS Composite Percentile Rank
PERCENTILE RANKS of HIGH ABILITY STUDENTS
Three Programs and Ex-post Facto
Ex-post Facto
90th% Alternates
Magnet
85th% Vanguard
Magnet - Alternates *
Vanguard
Ex-post Facto
1972-73 — 1975-76
* Anglo students only
Spring, Gr. 5
Gr. 3 Fall
Gr. 4 Fall
Gr. 5 Fall
Gr. 6 Fall

EXHIBIT N

APPENDIX A

ITBS TEST STATISTICS

Table 1. Two-Year ITBS Test Scores of Fifth Graders (Anglos) by Program

Program	N	Vocabulary		Reading		Language		Study Skills		Math		Composite	
		Pre*	Post*	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Alternates	82	5.7	7.3	5.8	7.4	5.8	7.4	5.5	7.3	5.4	7.2	5.6	7.3
Vanguard	186	5.6	7.1	5.8	7.2	5.8	7.5	5.6	7.3	5.4	7.1	5.6	7.3
Magnet	94	5.7	7.2	5.8	7.4	6.0	7.6	5.6	7.5	5.3	7.1	5.7	7.4
Aggregate	362	5.6	7.2	5.8	7.3	5.9	7.5	5.6	7.4	5.4	7.1	5.6	7.3

*Fall Grade 4 to Spring Grade 5

Table 2. One-Year ITBS Test Scores of Fourth Graders (Anglos) by Program

Program	N	Vocabulary		Reading		Language		Study Skills		Math		Composite	
		Pre*	Post*	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Alternates	146	5.5	6.0	5.8	6.2	5.7	6.4	5.5	6.0	5.2	5.7	5.5	6.1
Vanguard	207	5.7	6.2	5.9	6.4	5.8	6.5	5.8	6.3	5.3	5.9	5.7	6.3
Magnet	120	5.6	6.3	5.9	6.3	5.8	6.6	5.7	6.2	5.3	6.2	5.6	6.3
Aggregate	473	5.6	6.2	5.8	6.3	5.8	6.5	5.6	6.2	5.3	6.0	5.6	6.2

*Fall Grade 4 to Spring Grade 4